

U.S.S.N. 10/791,607

In the Claims

Please cancel Claims 1-21, 23, 38 and 39.

Please amend Claims 22, 26 and 28.

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Listing of Claims

Claims 1-21 (cancelled)

22. (currently amended) A phase change memory structure comprising:

a substrate comprising a conductive area; and

a spacer comprising a phase changing material sensitive to temperature and having a partially exposed sidewall region at the spacer upper portion defining a phase change memory element contact area;

wherein ~~the~~ a spacer bottom portion partially overlaps the conductive area~~+~~.

23. (cancelled)

24. (original) The phase change memory structure of claim 22, wherein the phase changing material comprises a chalcogenide.

25. (original) The phase change memory structure of claim 24, wherein the chalcogenide comprises a material selected from the group consisting of Ge, Te, and Sb and their alloy system.

26. (currently amended) ~~The~~ A phase change memory structure ~~of claim 23,~~ further comprising:

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a substrate comprising a conductive area;

a spacer comprising a phase changing material sensitive to temperature and having a partially exposed sidewall region at the spacer upper portion defining a phase change memory element contact area; and

an upper conductive electrode on the electrode contact area; wherein a spacer bottom portion partially overlaps the conductive area.

27. (original) The phase change memory structure of claim 26, wherein the upper conductive electrode comprises a material selected from the group consisting of W, TiN, TiW, TiAl, TiAlN, and combinations thereof.

28. (currently amended) ~~The A~~ phase change memory structure of claim 22, wherein comprising:

a substrate comprising a conductive area;

a spacer having a partially exposed sidewall region at the spacer upper portion defining a phase change memory element contact area;

wherein the spacer comprises a conductive material and a spacer bottom portion partially overlaps the conductive area;—.

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29. (original) The phase change memory structure of claim 28, wherein the conductive material comprises a material selected from the group consisting of W, TiN, TiW, TiAl, TiAlN, and combinations thereof.

30. (original) The phase change memory structure of claim 28, further comprising:

a phase changing memory element sensitive to temperature on the electrode contact area; and,

an upper conductive electrode on the phase changing memory element.

31. (original) The phase change memory structure of claim 30, wherein the phase changing memory element comprises a chalcogenide.

32. (original) The phase change memory structure of claim 31, wherein the chalcogenide comprises a material selected from the group consisting of Ge, Te, and Sb and their alloy system.

33. (original) The phase change memory structure of claim 30, wherein the upper conductive electrode comprises a material selected from the group consisting of W, TiN, TiW, TiAl, TiAlN,

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and combinations thereof.

34. (original) The phase change memory structure of claim 22, wherein the spacer is disposed adjacent a sidewall of a dielectric insulating portion.

35. (original) The phase change memory structure of claim 34, wherein the dielectric insulating portion is disposed partially overlapping the conductive area.

36. (original) The phase change memory structure of claim 34, wherein the dielectric insulating portion is disposed spaced apart from the conductive area.

37. (original) The phase change memory structure of claim 34, wherein the dielectric insulating portion comprises silicon oxide selected from the group consisting of PECVD oxide, PETEOS, BPTEOS, BTEOS, PTEOS, TEOS, PEOX, low-K dielectric, and fluorine doped silicate glass (FSG).

Claims 38-39 (cancelled)

40. (original) A phase change memory structure comprising:
a substrate comprising a conductive area; and,

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a spacer having a partially exposed positive radius of curvature at the spacer upper portion defining a phase change memory element contact area, the spacer comprising a material selected from the group consisting of a conductive material and a phase change material sensitive to temperature; wherein the spacer bottom portion partially overlaps the conductive area.